



Operational Changes to Improve SC PRAMS Survey Responses

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Introduction and Problem Statement

The South Carolina Department of Health and Environmental Control (DHEC) is a state agency whose mission is to improve the quality of life of all South Carolinians by protecting and promoting the health of the public and the environment. The South Carolina Pregnancy Risk Assessment Monitoring System (SC PRAMS) is a grant funded by the Centers for Disease Control and Prevention (CDC) that is housed in DHEC. The CDC federal agency's mission is "to protect America from health, safety and security threats, both foreign and in the U.S. Whether diseases start at home or abroad, are chronic or acute, curable or preventable, human error or deliberate attack, CDC fights disease and supports communities and citizens to do the same." (CDC, 2017). As you can see both agency's missions focus on the health of the population; PRAMS is able to offer information on the health of mothers and babies in SC.

PRAMS is a program that sends surveys to new mothers (2-4 months after birth). This survey asks the mothers questions about their behaviors and attitudes before, during and after pregnancy. This data is used by state and local governments, as well as researchers, to determine why some babies are born healthy and others are not. The questions include information regarding the mothers' pregnancy intention, contraception use, breastfeeding practices, tobacco and alcohol use, prenatal care, pregnancy related morbidity, and more. Once the data is collected it is linked with the mother's birth certificate data for analysis. The birth certificate has data about the mother's demographics and medical history that is collected by the state's vital records department. Once the data set is complete, it is then weighted by the CDC to give a full representation of all births in the SC.

SC PRAMS has been collecting data since 1992. In the most recent years, the program has seen a drastic decrease in response rates. The CDC requires a weighted response rate of 60%

or higher to use the data as a complete representation of the SC. States are allowed to use the data for themselves if the response is lower, however the CDC will exclude the state from their research. SC’s response rate has failed to meet this threshold for the past 8 years.

Trends in National Survey Data Collection

With life moving faster than ever, Americans have become stingier with what they chose to spend their time on. Public opinion surveys has been one area that has taken the hit. The Pew Research Center has researched this decline over the past 10 years. They looked at the ability to reach the intended participant, cooperation and response rate. As you can see in the below Table 1, the percentage has taken a drastic decline. This decline is evident in all types of surveys, regardless of survey mode (phone, web and mail). [\(site Pew\)](#)

Table 1.

Surveys Face Growing Difficulty Reaching, Persuading Potential Respondents						
	1997	2000	2003	2006	2009	2012
	%	%	%	%	%	%
Contact rate (percent of households in which an adult was reached)	90	77	79	73	72	62
Cooperation rate (percent of households contacted that yielded an interview)	43	40	34	31	21	14
Response rate (percent of households sampled that yielded an interview)	36	28	25	21	15	9
PEW RESEARCH CENTER 2012 Methodology Study. Rates computed according to American Association for Public Opinion Research (AAPOR) standard definitions for CON2, COOP3 and RR3. Rates are typical for surveys conducted in each year.						

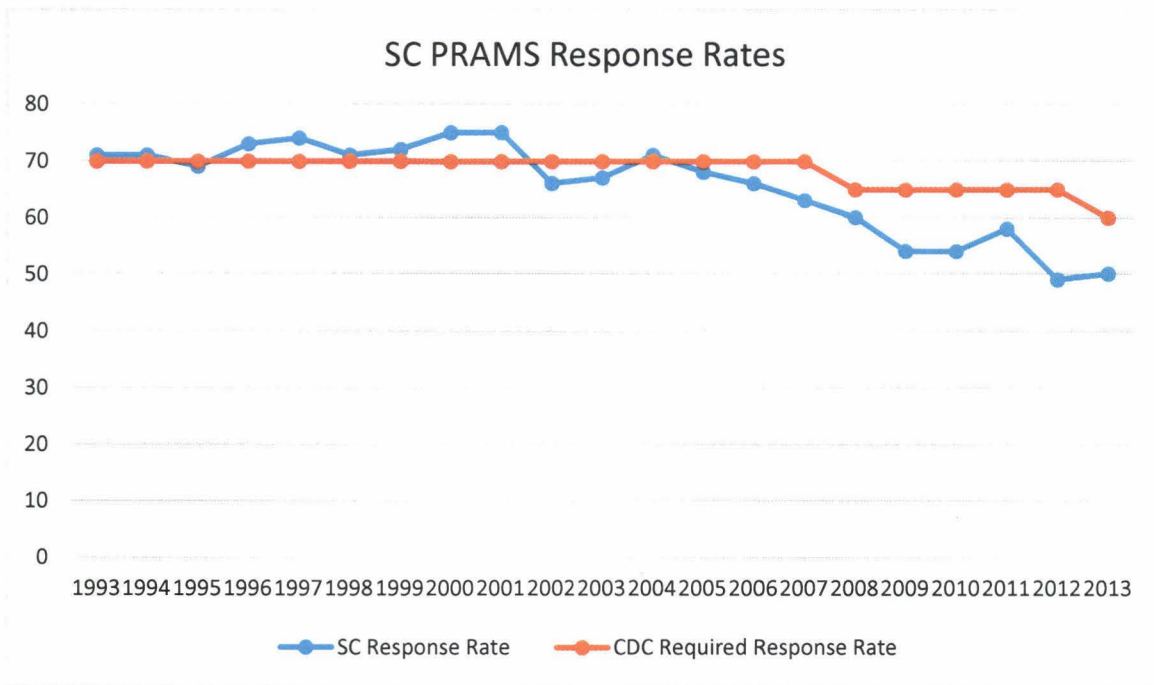
There are many other reasons that suggest why the rate of response has continued to decline. Some research suggest that due to the increase in the amount of surveys that are asked of people, the costs of time outweighs the reward. There has been an increase of approximately 50% in the number of public opinion surveys in the past 30 years (Nonreponse in Social Science, 2013). With this amount of survey overload, potential participants often ignore the surveys when

they come across them. Another deterrent is the lack of trust in the government or entity to keep the survey responses private.

PRAMS Response Rates

SC PRAMS has followed in the national trend for survey response. Table 2 shows the response rates for the project since conception in 1991 (began data collection in 1993). For a little over the first 15 years of PRAMS, CDC set the required response rate for data use at 70%. The CDC believes any rate below 70%, which was regarded as the epidemiological valid threshold, could contain potentially biased estimates and should be interpreted with caution. With all survey responses dropping, the CDC lower the response rate requirement to 65% in 2007 and then dropped the rate again in 2012 to 60%.

Table 2

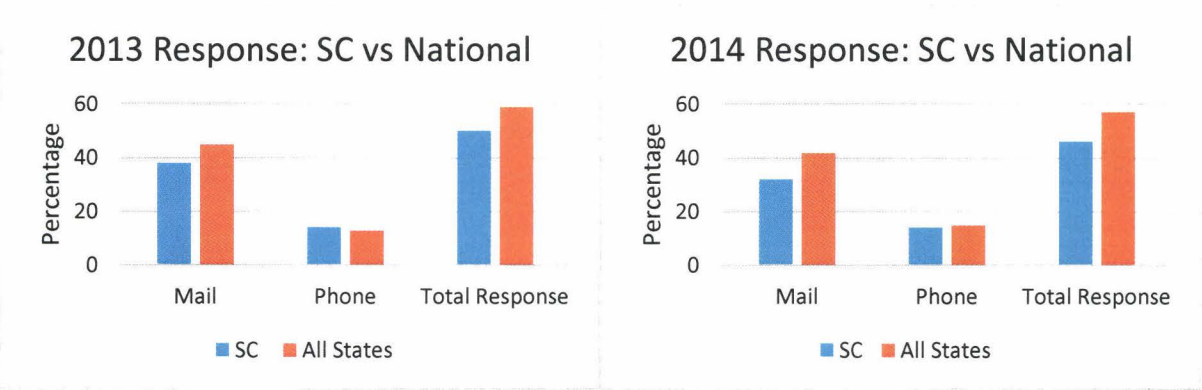


South Carolina Verses All States

As previously mentioned, CDC will not use any state PRAMS data that falls below the threshold (70%, 65%, 60%) response rate. There is a steady decline in the number of states that allowed to participate in national PRAMS studies. Appendix A shows the availability of PRAMS data at the national level. As can be seen in Appendix A, many states are struggling to reach the threshold. States can use their PRAMS data for as deemed appropriate at the state level, however the CDC will not include the data with their studies. Excluding the states with lower rates greatly hinders the research. The majority of the states who are not reaching the intended response rate tend to be in the southeast region or in a rural area. This data is also very informative and needs to be included to give a full representation of the United States.

SC sits well below the average compared to all participating states. Table 3 shows data collection in 2013 and 2014. From the tables you can see how SC is struggling in both survey modes, mail and phone as compared to the average of all states nationally. It is apparent that the mode that is taking the biggest hit is the mail phase, so that is where SC PRAMS plans to spend the time and resources available.

Table 3



Regionally

If you look at the response rate of SC as it compares to states in the region (southeast), you can see the rates are comparable. Table 4 shows southeast PRAMS states response rates for 2007 – 2013. As seen from the table, other than two states (GA and TN, both of which use monetary incentives), all of the southeast region fell below the threshold of 60% in 2013. States are still waiting on response rates from 2014- 2015.

Table 4: Response Rates of Southeastern PRAMS states

	2007	2008	2009	2010	2011	2012	2013
AL	64	60	58	62	59	49	53
FL	50	57	61	61	62	54	55
GA	67	68	66	65	67	68	66
MS	54	68	70	64	63	42	27
NC	71	72	63	56	54	51	44
SC	68	59	59	55	61	48	53
TN	63	70	67	61	61	60	61

There are a couple factors that could lend reason for the low response rate in southeastern region, poverty rate and educational attainment. The United States poverty rate is 14.8%. All southeastern states (participating in PRAMS) have higher poverty rates than the national average. Not only are the rates higher than the national average, but they all fall within the top 25% percentile. South Carolina's poverty rate is 17.9%, 12th highest in the nation. (U.S. Census, *Income, Poverty and Health Insurance Coverage in the United States: 2014*)

Low educational attainment is also a factor that tends to lead to low responses. There is a higher completion rate of those who have more than a high school education. The United States average of residents (18 years and older) who have graduated high school is 86.7%. All states in the southeastern region participating in PRAMS fall below this rate (except Florida, 86.9%). The southeastern average is 85.1% of residents having a high school education. This is also true of higher education. The US average having a bachelor's degree is 29.38%, whereas the rate for southeastern states is 25.6% (with no states above the average). The United States average of advanced degrees is 11.2%, whereas the southeastern states is 9.3% (again with no states above the average). (U.S. Census Bureau, *2011-2015 American Community Survey 5-Year Estimates*)

Past Changes

Beginning in 2009, SC began to look at all operations. It was shocking to see the 9% decline in response from 2007 to 2008. At that point the mailing packages were redesigned. Previously the envelope was an official manila color. It was decided that a white envelope may be more appealing to the public. The survey covers were also redesigned. Prior to 2009 the survey cover was very plain with no images, other than a teddy bear (Appendix B). The art department at DHEC designed a more colorful cover (Appendix C) after looking at the other states' survey covers. In 2011, CDC recommended SC use a different cover for mothers who have lost their baby since birth, in order to be more sensitive. Appendix D includes the covers that were used for years 2012-2015. The covers were then updated again in 2016 (Appendix E).

The change(s) that most states show make the biggest difference in response rates are in incentives and rewards. Up until 2009 SC only offered a reward for mothers whom completed

the survey. For every approximately 400 sampled mothers, one name would be randomly selected to win a “lottery” prize of \$500. As government budgets tightened and with state employees losing their jobs, DHEC thought this seemed like an expensive reward and mandated that amount be reduced to \$100 due to the perception it could give the public. At that point an incentive was also established as a replacement. SC began including a CD, Nursery rhymes for mothers with babies living and a relaxation CD for those whom had list their baby, in all first mailings.

Beginning in 2015, mothers began commenting they did not have a CD player but did use iTunes or MP3 players. Once all the CD’s in stock were mailed out, SC decided to take another look at the incentive. With CD’s not being as popular, the promotional company recommended a nylon, pull string, cinch bag. It is the size of a large grocery store bag in a navy color with the state’s symbol on the front (palmetto tree with crescent moon). These were sent in all first mailings beginning with 2016 birth sample.

With the consistent declining rate, SC was concerned the contact information received from Vital Records was incorrect or out of date. PRAMS staff researched and tried several different online, pay-per-click sites to look up contact information. Each site was given a six month trial and at the end of the trials a contract was signed with the company whose information was more useful. As can be seen with the response rates, these changes did not help increase rates. The SC PRAMS rate continues to drop despite all efforts.

The SC PRAMS Plan

SC PRAMS needs to see a drastic improvement in response rates in order to keep CDC funding for the program. There has been a collaborative effort between SC PRAMS and CDC

PRAMS to brainstorm what needs to be done in order to get the response rate closer to the 60% benchmark. There have been many suggestions and together there have been a few decisions made on what changes will be made in order to increase these rates.

The first change SC PRAMS made was to change the postage used on all mailings. All mailings prior to January 11, 2017 were metered at the DHEC mailroom. In order to make the mailings appear to be more personal the program began adhering forever stamps on all outgoing mailings and they were mailed from a local post office. There has only been one batch (a monthly sample) processed using stamps. It is too early to tell whether this effort will be beneficial. Currently this batch has not seen an increase in mail response, but the opposite. The mail rate has dropped by 33%, compared to the other 12 batches in this sample year.

Other PRAMS states have implemented monetary incentives, such as gift cards and cash. SC has fought to add this type of incentive, but due to state guidelines the proposal has been denied every time. The only monetary item that can be offered by SC is a \$10 diaper voucher to Wal-Mart. Beginning with 2017 births (all mailings sent out after April 1, 2017), SC PRAMS has decided to use a \$10 diaper vouchers as the incentive (included in all first mailings) and reward (will be mailed out once the survey has been received) for mothers with a living baby. The current incentive, a navy cinch bag, will still be used for mothers whose baby has passed since birth. With the addition of the diaper voucher, new materials will be printed in order to provide instructions on how to use the voucher. This information will be printed on folder, right beside the voucher. We will also include SC pregnancy statistics on the inside cover of the folder. This will offer a nicer presentation of the materials and also show what the information gathered is being used for in SC.

Also beginning with 2017 births, SC will change the sampling timeline. Currently, the surveys are mailed to sampled mothers four months after the birth of their baby. It is up to the state's discretion on how long to wait. The purpose of waiting is to gain more information on sleep position, breastfeeding and other behaviors and attitudes after pregnancy. With SC having a problem with gaining access to good contact information, it is believed this may be too long of a wait. Therefore, beginning with 2017 births, the timeline will change to a 3 month wait. Hopefully this will help reach the more transient mothers.

With these four major changes (postage, incentive, reward and sampling timeline) it is the program's hope to see an increase to the 60% benchmark response rate. The program has overcome many hurdles to get these changes in place in hopes of big positive changes.

Will this work?

CDC has noticed that states who offer the monetary rewards/ incentives are much more likely to reach the 60% response threshold. Data analyst for the state and CDC will analyze response on a quarterly and yearly basis. If a decrease is seen in these results, CDC and SC PRAMS will meet and discuss whether operations should be adjusted again. Due to the mailing timetable, SC will perform quarterly analysis to gather whether or not the operational changes are increasing the rate. According to CDC, reaching the 60% goal response would be make these efforts considered a success. However, SC PRAMS staff and collaborators feel that any increase would make these efforts worthwhile.

SC will be only the second state to offer diaper vouchers as an incentive or reward. TN began offering this incentive with October 2016 births but they have not had time to do any analysis on the response trend since initiation. There are still 18 states that are not offering

monetary rewards. SC, TN and CDC are hoping the trial and errors overcome during the rollout of the vouchers will help these others states who want to offer something similar. .

Conclusion

The PRAMS program has offered such valuable research to states. PRAMS gathers data that would not be available through any other source. State health officials use this data to implement policies and program to improve the health of mother and infants. It is important this program not only continue, but thrive. Hopefully with the plan described, the SC PRAMS program will be able to continue to offer the informative data to its great state.

References

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Appendix A:
Availability of PRAMS Data

Availability of PRAMS Data, 1988 – 2014, by Site																											
● Data available for release by CDC						○ Data not available for release by CDC*						--Did not participate						□ Data not yet processed by CDC									
Questionnaire Phase	Phase 7			Phase 6			Phase 5					Phase 4				Phase 3				Phase 2						Phase 1 - Pilot	
Site	2014	2013	2012 [†]	2011	2010	2009	2008	2007 [‡]	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988 [¶]
Alabama	●	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--
Alaska	●	●	●	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--
Arkansas	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--
Colorado	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	--	--	--	--	--	--	--	--	--
Connecticut	□	○	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Delaware	□	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Florida	□	○	○	○	○	○	○	○	--	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--
Georgia	□	●	●	●	●	●	●	●	●	●	●	○	○	○	○	--	--	●	●	●	●	--	--	--	--	--	--
Hawaii	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--
Illinois	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--
Iowa	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Louisiana	○	○	○	○	○	○	○	○	○	--	●	●	●	●	●	●	●	○	--	--	--	--	--	--	--	--	--
Maine	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Maryland	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--
Massachusetts	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Michigan	○	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	●	●	●	●	--	--	--	--	--
Minnesota	□	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mississippi	○	○	○	○	○	●	●	○	●	--	●	●	○	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Missouri	●	●	●	●	●	●	○	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nebraska	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--
New Hampshire	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
New Jersey	□	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--
New Mexico	●	●	●	●	○	○	○	○	○	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--
New York City	□	●	●	●	●	○	○	●	●	●	●	○	○	--	--	--	--	--	--	--	--	--	--	--	--	--	--
New York State	□	●	○	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--
North Carolina	○	○	○	○	○	○	●	●	○	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--
Ohio	□	○	●	○	●	●	●	●	●	●	○	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--
Oklahoma	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Oregon	○	●	●	●	●	●	●	●	--	--	--	--	○	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pennsylvania	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rhode Island	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--
South Carolina	□	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--
Tennessee	●	●	●	○	○	●	●	○	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Texas	○	○	○	○	○	●	○	○	○	○	○	○	○	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--
Vermont	●	●	●	●	●	●	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--
Virginia	○	○	○	○	○	○	○	○	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	--	--	--	--	--
West Virginia	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Wisconsin	●	●	●	●	○	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wyoming	●	●	●	●	●	●	●	●	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total participating sites	41	41	38	38	38	38	38	38	29	28	30	30	30	23	20	17	15	16	11	11	11	11	6	4	4	3	3
Total sites available for release	18	31	29	27	28	29	29	30	24	26	27	27	25	22	19	17	15	14	11	11	11	10	6	4	4	3	3
Total sites not available for release	9	10	9	11	10	9	9	8	5	2	3	3	5	1	2	0	0	2	0	0	0	1	0	0	0	0	0
Percentage of participating sites with data available	65%	76%	76%	71%	74%	76%	76%	79%	83%	93%	90%	90%	83%	96%	95%	100%	100%	88%	100%	100%	100%	91%	100%	100%	100%	100%	100%

*Data did not meet the response rate threshold for the year and can be released only by the site

[†]60% response rate threshold for data release by CDC begins

[‡]65% response rate threshold for data release by CDC begins

[¶]70% response rate threshold for data release by CDC begins

Appendix B:
Original Cover through 2008

South Carolina



PRAMS

**PREGNANCY RISK ASSESSMENT
MONITORING SYSTEM**

**A Survey of Health of Mothers and Babies
in South Carolina**

**If you have any questions, please call:
The PRAMS Staff**

1-800-286-6968

**S.C. DHEC Office of Public Health Statistics and Information Services
2600 Bull Street • Columbia, SC 29201**

Appendix C:
Survey Cover: 2009 - 2011

PREGNANCY RISK ASSESSMENT MONITORING SYSTEM

A Survey to
Improve the Health of
Babies & Mothers in South Carolina



SOUTH CAROLINA
PRAMS

Appendix D:
Survey Covers: 2012 - 2015

A Survey to
Improve the Health of
Babies & Mothers in South Carolina



Return this
survey and
you could
win \$100!

See inside for details.

SOUTH CAROLINA
PRAMS

PREGNANCY RISK ASSESSMENT MONITORING SYSTEM

*A Survey to
Improve the Health
of Babies & Mothers
in South Carolina*

SOUTH CAROLINA
PRAMS

Return this
survey and
you could
win \$100!

See inside for details.

Appendix E:
Survey Covers: 2016 - Current

PREGNANCY RISK ASSESSMENT MONITORING SYSTEM

A Survey to
**Improve the Health of
Babies & Mothers**
in South Carolina



SOUTH CAROLINA
PRAMS

PREGNANCY RISK ASSESSMENT MONITORING SYSTEM

A Survey to
**Improve the Health
of Babies & Mothers**
in South Carolina

SOUTH CAROLINA
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